The term 24-hour knowledge factory connotes a globally distributed work environment in which team-mates work on a project around the clock. The 24-hour knowledge factory is a special case of a globally distributed team in which the different teams work on a sequential basis that has been clearly defined in advance. Whereas a manufactured item was the end product in the case of the factory which emerged as a consequence of the industrial revolution, knowledge-based services and knowledge-based products are the end deliverables in the case of the current information revolution; hence, the term 24-hour knowledge factory. Work can be decomposed by task style or by organizational style, and allows for greater specialization of workers. A case study from IBM details surprising differences between colocated and distributed teams, and leads to a future state analysis for organizations seeking to study or implement the 24-hour knowledge factory.

Keywords: globalization of IS; knowledge models; organization of work; software management
the project is improved since each location perceives that progress is made “overnight” when workers at that location are asleep. Additional models, discussed in the following sections, are characterized by different distributions of tasks depending on the appropriate needs for information management.

In a “24-hour software development environment” (Gupta & Seshasai, 2007) that encompasses three or more development centers located around the world, the distributed team is envisaged to concentrate on the same problem and to perform the same function (whether it be development of code or testing of subsystem) on a successive basis, with each collaborating center retaining ownership of the endeavor for 8-hour periods in every 24-hour cycle. Many industries, including the software industry, are characterized by a development cycle that relies heavily on sequential performance of specific functions, such as development, testing, and verification. In a traditional software development environment, where all parties are located in the same geographic area, a code developer typically waits until a fully functional portion of the product is available before passing it on to an engineer to test it. However, with the potential for receiving testing feedback overnight, the developer now has the unprecedented opportunity to build portions of the product on an incremental and more daily basis.

**Evolution From Factory to Knowledge Factory**

The notion of the 24-hour knowledge factory can be traced back to the industrial revolution. Since the installed equipment was scarce and costly, different sets of employees were scheduled to work in successive shifts so that the manufacturing facilities could be used on a round-the-clock basis. The use of the 8-hour shift system evolved over time. This involved decomposition of the manual tasks involved in fabricating an agricultural implement or a handgun into a series of tasks that could be performed relatively independently of each other with the assistance of different machines. Initially, each worker was directed to work 12 to 16 hours a day so that each machine could be used for an extended period of time. Then, the notion of having two shifts evolved. Based on new legislation on both sides of the Atlantic, the work hours were gradually reduced. The introduction of the shift system yielded benefits in terms of higher productivity of each machine, reduced production times, and lower prices.

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